Managerial Insights for Sustainable Real Estate Innovation

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- Introduction to sustainability

- Sustainable Real Estate Development
  - Products
  - Processes
  - Chain

- Conclusion
Introduction

- Global warming:
  - Temperatures rising
  - Melting ice caps
  - Unpredictable weather patterns
  - Depleting water resources

→ Increased CO₂ Emissions

Solution: Sustainability decreases CO₂ emissions
Sustainability – definition

“Meet present needs without compromising the ability of future generations to meet their needs“

(UN Conference WECID, 1987).
Sustainability and firms

- General attitude: Increased costs and governmental pressure

- Nidumolu, Prahalad, Rangaswami (2009) recently proposed sustainability as opportunity for competitive advantage
  
  - “Sustainability is the key driver of innovation”

- In practice observed at Heijmans N.V.
  
  → Large Dutch construction and infrastructure development organization.
Sustainability framework

Sustainable balance

- Products
- Business Processes
- Chain

People

Planet

Profit
Sustainable Real Estate Development

“The solution to the climate crisis isn’t far off in the future; it’s in the buildings we inhabit, our civic infrastructure and the way we organize our lives.”

(Former USA President Bill Clinton)
Real Estate Value Chain

- Value chain:

  Raw Materials → 1 → 2 → 3 → PRODUCT

  BUSINESS PROCESSES

  Innovation process
Products

Products

Business Processes

Chain
Case 1: Rabobank Headquarters

“The binoculars”

- 105 meters high
- 25 Floors
- 56,000 m² floor surface
Case 1: Rabobank Headquarters

- Sustainable facts:
  - EPC = 0.567
  - 43% lower than standardized allowable energy consumption
  - FSC wood project certificate
  - Self providing energy system
Products

- Relevant goals:
  - Reduction of CO₂ emission
  - Reduction of energy consumption
  - Waste reduction & separation
  - Purchase of sustainable raw materials
Business Processes

Products

Business Processes

Chain
Case 2: Mobile Asphalt Production Factory

- Infrastructure:
  - Mobile asphalt plants
    - Production on each designated location
    - Less CO₂ emission
Gaining competitive advantage

- Carbon Disclosure Project
  - Independent not-for-profit organization

- ISO 14001: 2004
  - Environmental management system standards

Source: cdproject.net / iso.org
Business Processes

- Relevant Goals:
  - Reduction of CO₂ emission
  - Reduction energy consumption
  - Waste reduction & separation
  - Quality certificates

For own footprint reduction
Chain

Products

Business Processes

Chain
Rotterdam Climate Initiative

- 50% less CO2 emission in 2025 compared to 1990
- Climate change program
- Enhance economic climate Rotterdam
Case 3: Floating pavilions
Chain

- Open innovation

“In this world, companies must become nimble at ‘open innovation’ – at accessing and exploiting outside knowledge while liberating their own internal expertise for others’ use.”

(H.W. Chesbrough, 2003)
Chain: sustainable operations

- Use of FSC certified wood
- Stimulation of sustainable operations in total chain
- Risk: Suppliers may refuse to offer FSC certified wood

→ trade-off for construction engineering organizations
Chain

- Relevant goals:
  - Reduction of CO₂ emission
  - Reduction energy consumption
  - Waste reduction & separation
  - Stimulate diversity
  - Stimulate ‘learning organization’
  - More use of FSC certified wood
Conclusion

Delivering CO₂ neutral products (products)

Much to gain in the route to the product (process)

Taking responsibility to promote planet (chain)
Thank you for your attention.

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